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09/709,685	11/09/2000	Jian Fan	10002599-1	4729

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EXAMINER	
WORKU, NEGUSSIE	

ART UNIT	PAPER NUMBER
2625	

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/709,685	FAN, JIAN	
	Examiner	Art Unit	
	Negussie Worku	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 6/7/05; 10/22/02; 2/24/04; 11/09/00

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1. Applicant's response with respect to claims 1 through 44 has been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 through 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Al-Hussein (USP 5,818,978) in view of Luther et al. (USP 6,449,065).

With respect to claim 1, Al-Hussein discloses a method for analyzing an image, (image scanned by scanner section 22 of fig 5, received by computer 20 of fig 5, for analyzing for further processing, see col.8, lines 63-68), the method comprising the steps of receiving data representing a plurality of element of an image (computer receive scanned image from a scanner, see (col.3, lines 54-56); characterizing each element in the plurality of elements according to a perceived characteristic, see (col.2, lines 16-19).

Al-Hussein do not disclose identifying each element having a given characteristic that is adjacent an element having a characteristic approximately the same as the given characteristic.

Luther et al., in the same area of a document image capture method, scanner and an image processing (as shown in fig 1), teaches identifying each element having a given characteristic (text, line drawings, color or grayscale image (abstract) that is adjacent an element having a characteristic approximately the same as the given characteristic, see (abstract).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the imaging apparatus of Al-Hussein to include: identifying each element having a given characteristic that is adjacent an element having a characteristic approximately the same as the given characteristic.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified imaging device of Al-Hussein by the teaching Luther because of the following reasons: It would have allowed to a user ensure that acquired image data will be of quality and a resolution suitable for the content of the image, even if the image contains text together with gray scale or color image or both.

With respect to claim 2, Al-Hussein discloses the method (fig 1-5), wherein the step of receiving data includes the step of receiving data from a memory (RAM memory 79 of fig 5) location.

With respect to claim 3, Al-Hussein discloses the method (fig 1-5), wherein the step of characterizing includes the step of characterizing a plurality of pixels representing an image, see (col.10, lines 5-15).

With respect to claim 4, Al-Hussein discloses the method (fig 1-5), wherein the step of characterizing includes the step of identifying pixels representing background, see (col.18, lines 10-12).

With respect to claim 5, Al-Hussein discloses the method (fig 1-5), wherein the step of characterizing includes the step of identifying pixels representing black information, see (col.18, lines 10-12).

With respect to claim 6, Al-Hussein discloses the method (fig 1-5), wherein the step of characterizing includes the step of identifying pixels representing color information; see (col.18, lines 1-15).

With respect to claim 7, Al-Hussein discloses the method (fig 1-5), wherein the step of characterizing includes the step of identifying pixels representing an edge, (col.18, lines 5-10).

With respect to claim 8, Al-Hussein discloses the method (as shown in fig 5), wherein the step of characterizing includes the step of evaluating a luminance value for a pixel and comparing the luminance value to a number, (step 1207 of fig 12, see col.18, lines 5-10).

With respect to claim 9, Al-Hussein discloses the method (as shown in fig 5), wherein the step of evaluating a luminance value includes the step of comparing the luminance value to a number representing a white threshold (white pixel), see col.8, lines 24-25, and also (l.18, lines 5-10).

With respect to claim 10, Al-Hussein et al. discloses the method (as shown in fig 5), wherein the step of evaluating a luminance value includes the step of comparing the luminance value to a number representing a black threshold, (step 1207 of fig 12, a given value for a black pixel A1", for white A0" value is given and are adjacent (white pixel), see col.8, lines 24-25, and also (l.18, lines 5-10).

With respect to claim 11, Al-Hussein et al. discloses the method (as shown in fig 1), wherein the step of evaluating a luminance value includes the step of assigning to the pixel a representation of either one of black, white or gray. (black, white, black-white, gray, see col.18, lines 1-15), and assigning the characteristic to a pixel (pixel set to binary A1", if pixel is black, to) ιφ pixel is white, see (col.18, lines 10-14).

With respect to claim 12, Al-Hussein et al. discloses the method (as shown in fig 5), wherein the step of evaluating a luminance value includes the step of assigning to the pixel a representation of either one of black, white or color. see (col.17, lines 33-38).

With respect to claim 13, Al-Hussein et al. discloses the method (as shown in fig 5) wherein step of identifying each element that is adjacent includes the step of identifying each element that is adjacent an element having the given characteristic, see col.17, lines 33-35), see (col.13, lines 35-40).

With respect to claim 14, Al-Hussein et al. discloses wherein the step of identifying each element that is adjacent includes the step of using an eight-neighbors system, see (col.17, lines 33-35, col.13, lines 35-40).

With respect to claim 15, Al-Hussein et al. discloses the method (as shown in fig 5), the method of claim 1 wherein the step of identifying each element that is adjacent includes the step of identifying adjacent pixels that are background pixels, (col.13, lines 35-40).

With respect to claim 16, Al-Hussein et al. discloses the method (as shown in fig 5), wherein the step of identifying each element that is adjacent includes the step of identifying adjacent pixels that are non- background pixels, (col.2, lines 5-9).

With respect to claim 17, Al-Hussein et al. discloses the method (as shown in fig 5), wherein the step of identifying each element that is adjacent includes the step of identifying adjacent pixels that are characterized as either one of black, gray, gray edge, color, color edge, or white (22 of fig 5), via interface 71 of fig 5, to representation indicating that the images black and white text, see col.2, lines 5-9).

With respect to claim 18, Al-Hussein et al. discloses the method (as shown in fig 8), wherein the step of identifying each element that is adjacent includes the step of identifying adjacent pixels that are characterized as background, and further including the step of identifying adjacent pixels characterized as background and also characterized with a label, (col.17, lines 33-34), see (col.18, lines 1-15).

With respect to claim 19, Al-Hussein et al. discloses the method (as shown in fig 5), wherein the step of identifying each element that is adjacent includes the step of identifying adjacent pixels that are characterized as no background, and further including the step of identifying adjacent pixels characterized as non background and also characterized with a label, see (col.17, lines 33-35), see (black and white col.18, lines 5-10).

With respect to claim 20, Al-Hussein et al. discloses the method (as shown in fig 5), wherein the step of identifying pixels with a label include the step of identifying pixels labeled one of edge, color, vay, and black, (5b of fig 1(b), see (col.9, lines 32-34).

With respect to claim 21, Al-Hussein et al. discloses the method (as shown in fig 5), further comprising the step the step of determining if the number of non-background pixels having a given label and that are adjacent are less than or greater than a gi, (plural group of pixels intensities analyzed in fig 13a, which includes histogram the value of each group being determined, see (col.17, lines 32-35, the feature used to classify each pixel maybe black, white, gray etc, see (col.18, lines 5-10).

With respect to claim 22, Al-Hussein et al. discloses the method (fig 1-5 processing elements (image scanned by scanner section 22 of fig 5, received by computer 20 of fig 5, for analyzing for further processing, see col.8, lines 63-68) in an image, the method comprising the steps of: receiving a plurality of elements in an image see (col.8, lines 63-68);

Al-Hussein do not disclose identifying elements of the plurality of elements of the image that represent an edge of a portion of the image; and identifying elements of the image that represent an edge and that are adjacent at least one other element representing an edge.

Luther et al., in the same area of a document image capture method, scanner and an image processing (as shown in fig 1), teaches identifying elements of the plurality of elements of the image that represent an edge of a portion of the image, see (abstract); and identifying elements of the image that represent an edge and that are adjacent at least one other element representing an edge, see (abstract).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the imaging apparatus of Al-Hussein to include: identifying elements of the plurality of elements of the image that represent an edge of a portion of the image; and identifying elements of the image that represent an edge and that are adjacent at least one other element representing an edge.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified imaging device of Al-Hussein by the teaching Luther because of the following reasons: It would have allowed to a user ensure that acquired image data will be of quality and a resolution suitable for the content of the image, even if the image contains text together with gray scale or color image or both.

With respect to claim 23, Al-Hussein et al. discloses the method (as shown in fig 5), wherein the step of analyzing includes the step of assigning a graphic label, see (l.2, lines 47-49), col.17, lines 33-35) if there is more than one dominant sub class of pixels, (the feature used to classify each pixel maybe black, white, gray etc, see (col.18, lines 5-10).

With respect to claim 24, Al-Hussein et al. discloses a method (as shown in fig 5), of evaluating an image comprising the steps of: receiving a scanned image (scanner 22 of fig 5); segmenting at least part of the scanned image to produce a segmented image see (col.17, lines 33-35); analyzing the segmented image for text or graphic, see col.13, lines 24-25); and classifying the at least part of the image as text, see (col.2, lines 44-36), only, graphic only or mixed, see (col.2, lines 46-48).

With respect to claim 25, Al-Hussein et al. discloses the method (as shown in fig 5), of wherein the step of analyzing includes the step of determining pixel-by-pixel whether the pixel is black, white or graphic, see (col.18, lines 5-10).

With respect to claim 26, Al-Hussein et al. discloses the method (as shown in fig 5), wherein the step of classifying includes the step of grouping pixels by similar pixel type, see (col.17, lines 33-35).

With respect to claim 27, Al-Hussein et al. discloses the method (as shown in fig 5), wherein the step of classifying further includes the step of grouping pixels by proximity to adjacent pixels of the same type, see (col.17, lines 33-35).

With respect to claim 28, Al-Hussein et al. discloses the method (as shown in fig 5), further comprising the step of retrieving the stored classification of the at least part of the image, see (col.17, lines 33-35).

With respect to claim 29, Al-Hussein et al. discloses the method (as shown in fig 5), wherein the step of retrieving the stored classification further comprises the step of retrieving classification information for the complete image, see (col.11, lines 60-65).

With respect to claim 30, Al-Hussein et al. discloses wherein the step (as shown in fig 5), of retrieving the stored classification (Ram memory 79 of fig 5), further comprises the step of retrieving classification information for the complete image, see (col.13, lines 41-43).

With respect to claim 31, Al-Hussein et al. discloses the method (as shown in fig 5), wherein the step of retrieving the stored classification further comprises the step of retrieving classification information for the at least part of the image, see (col.11, lines 60-65), and further comprising the step of scanning a part of the image corresponding to the at least part of the image classified, see (col.11, lines 60-65).

With respect to claim 32, Al-Hussein et al. discloses the method (as shown in fig 5), wherein the step of classifying comprises the step of classifying the entire image from classification of pixels in the image, see (col.17, lines 33-35).

With respect to claim 33, Al-Hussein et al., discloses a method for controlling a scanner (22 of fig 5) comprising: receiving a scanned image (computer 20 receives

scanned image by scanner 22 of fig 5); segmenting at least part of the scanned image to produce a segmented image, see (col.8, lines 63-68); processing the segmented image using a CPU (60 of fig 5); analyzing the segmented image for text or graphic, see (col.2, lines 5-9); classifying the at least part of the image as text only, graphic only or mixed, see (col.13 line 24-26); and communicating to the scanner (22 of fig 2), a representation of at least one of the classification characteristics, see (col.13, lines-9), such that the CPU (60 of fig 1) applies setting to the scanner (22 of fig 5) based on a type of image being scanned.

With respect to claim 34, Al-Hussein et al., discloses the method (shown fig 5) further comprising the step of identifying pixels having substantially the same image characteristic and that are inter-connected, see (col.13, lines-9).

With respect to claim 35, Al-Hussein et al., discloses the method (fig 5) further comprising the step of applying a unique sub-label to the inter-connected pixels having the same image characteristic, see (col.13, lines-9).

With respect to claim 36, Al-Hussein et al., discloses the method (fig 5) further comprising the step of determining the number of interconnected pixels having substantially the same image characteristic, see (col.13, lines-9).

With respect to claim 37, Al-Hussein et al., discloses the method (fig 5) wherein the image characteristic is a first image characteristic, see (col.18, lines 5-10). and further comprising the step of determining the number of interconnected pixels that have a second image characteristic and comparing it to the number of pixels having the first image characteristic, see (col.13, lines-9).

With respect to claim 38, Al-Hussein et al., discloses the method (fig 5) further comprising the step of identifying pixels having the first image characteristic, see (col.18, lines 5-10), and that are adjacent to pixels having the second image characteristic see (col.18, lines 5-10).

With respect to claim 39, Al-Hussein et al., discloses the method (fig 1) further comprising the step of changing the pixels having the second image characteristic to an image characteristic (fig 1) closer to the first image characteristic, see (col.18, lines 5-10).

With respect to claim 40, Al-Hussein et al., discloses the method (fig 5) wherein the step of changing includes the step of changing a numeric value for the pixels having the second image characteristic by multiplying the numeric value by a number less than one, see (col.18, lines 5-10).

With respect to claim 41, Al-Hussein et al., discloses the method (fig 5) wherein the step of changing includes the step of changing a numeric value for the pixels having the second image characteristic to an average of a numeric value for the pixels having the first image characteristic, see (col.18, lines 5-10).

With respect to claim 42, Al-Hussein et al., discloses the method (fig 5) wherein the first image characteristic is black, see (col.18, lines 5-10), and the second image characteristic is other than black, see (col.18, lines 5-10).

With respect to claim 43, Al-Hussein et al., discloses the method (fig 5) further comprising the step of counting the number of non-black pixels that are interconnected and comparing to the number of inter connected black pixels, see (col.18, lines 5-10).

With respect to claim 44, Al-Hussein discloses a method for analyzing an image, (image scanned by scanner section 22 of fig 5, received by computer 20 of fig 5, for analyzing for further processing, see col.8, lines 63-68), of receiving data representing a plurality of element of an image (computer receive scanned image from a scanner, see (col.3, lines 54-56); characterizing each element in the plurality of elements according to a perceived characteristic, see (col.2, lines 16-19).

Al-Hussein do not teach identifying elements of the plurality of elements of the image that represent an edge of a portion of the image; and identifying elements of the image that represent an edge and that are adjacent at least one other element representing an edge.

Luther et al., in the same area of a document image capture method, scanner and an image processing (as shown in fig 1), teaches identifying elements of the plurality of elements of the image that represent an edge of a portion of the image, (see (abstract); and identifying elements of the image that represent an edge and that are adjacent at least one other element representing an edge, see (abstract).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the imaging apparatus of Al-Hussein to include: identifying elements of the plurality of elements of the image that represent an edge of a portion of the image; and identifying elements of the image that represent an edge and that are adjacent at least one other element representing an edge.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified imaging device of Al-Hussein by the teaching Luther because, it would have allowed to a user ensure that acquired image data will be of quality and a resolution suitable for the content of the image, even if the image contains text together with gray scale or color image or both.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Negussie Worku whose telephone number is 571-272-7472. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Negussie Worku
08/19/06

DOUGLAS Q. TRAN
PRIMARY EXAMINER